

## PERFORMANCE DATA AND ANALYSIS

This section provides a brief analysis, by exception, of the data found in the following performance charts. Items may include, but are not limited to, specific cost and schedule variances which contribute to the overall Site variances, overdue or forecast late milestones, staffing/full-time equivalent (FTE) anomalies, significant safety accomplishments or trends, and performance measure variances. For ease of reference, most items discussed in the following narrative have been shaded in the charts.

### FY 1999 Baseline Cost and Schedule Performance

Data Through March 1999

	Total FY BCWS	Current Fiscal Year Baseline Performance (\$ x Million)				
		FYTD			Cost Variance	Schedule Variance
		BCWS	BCWP	ACWP		
TWRS	327.1	159.8	141.2	138.1	3.0	(18.6)
Waste Management	123.8	61.7	58.0	51.9	6.1	(3.7)
Spent Nuclear Fuels	192.1	89.1	80.8	83.0	(2.2)	(8.3)
Facility Stabilization	192.1	98.8	74.5	75.1	(0.6)	(24.3)
Landlord	16.2	8.1	6.9	7.9	(1.0)	(1.2)
Environmental Restoration	155.4	72.2	66.9	62.1	4.8	(5.3)
Science & Technology	16.0	7.8	7.2	6.4	0.8	(0.6)
Mission Support	108.6	50.2	49.6	48.6	1.0	(0.7)
HAMMER	4.4	2.1	2.1	3.5	(1.4)	0.0
TWRS Regulatory Unit	5.0	2.2	2.1	1.8	0.3	(0.1)
National Programs	7.1	2.3	1.4	2.2	(0.8)	(0.9)
Advanced Reactors	42.8	20.2	19.4	18.1	1.3	(0.8)
Technology Development	24.5	10.1	9.2	8.8	0.4	(0.9)
Total Hanford Projects	1215.1	584.8	519.2	507.6	11.7	(65.5)

Note: Column headings (BCWS, BCWP, etc.) are defined in the glossary at the end of the report.

#### Cost Performance

Fiscal-year-to-date (FYTD) cost performance overall reflects a 2 percent (\$11.7 million) favorable cost variance. The Waste Management \$6.1 million favorable cost variance and the Environmental Restoration \$4.8 million favorable cost variance are primarily due to performance efficiencies and productivity. Details of the variances can be found in the individual Project Sections.

#### Schedule Performance

Overall, there is an 11 percent (\$65.5 million) unfavorable schedule variance that exceeds the established +10/-7.5 percent threshold. The unfavorable schedule variance of \$18.6 million for TWRS and \$24.3 million for Facility Stabilization is primarily due to the fact that the work scope currently in the baseline does not accurately reflect the work that is now planned. Change requests to align the baseline to funding constraints are underway.

## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

### Out Year Funding Requirements

\$ x Million Out Year Funding Requirements	FY 99		FY 00		FY 01		FY 02
	Approved Baseline	Funding Target	Approved Baseline*	Funding Target	Approved Baseline	Funding Target	Approved Baseline
<b>TWRS</b> *	313.0	305.9	344.0	335.0	331.6	382.1	322.8
<b>Waste Management</b>	122.9	113.1	133.2	120.0	150.2	131.0	158.5
<b>Spent Nuclear Fuel</b>	192.1	170.4	191.0	191.0	191.3	191.3	195.2
<b>Facility Stabilization</b>	170.0	168.1	183.7	200.0	182.3	159.8	180.3
<b>Landlord</b>	16.2	12.6	17.1	14.0	21.7	19.0	24.3
<b>Environmental Restoration</b>	155.4	146.0	157.3	135.1	181.2	106.3	236.8
<b>Science &amp; Technology</b>	16.0	15.0	13.1	14.0	19.9	16.1	18.2
<b>Mission Support</b>	41.5	51.2	37.2	43.0	43.1	45.5	42.5
<b>HAMMER</b>	4.7	5.8	6.5	5.9	6.7	6.0	6.8
<b>TWRS Regulatory Unit</b>	5.0	5.0	5.7	5.7	6.5	6.5	4.0
<b>National Programs</b>	7.1						
<b>Advanced Reactors**</b>	1.8	1.9	1.4	1.4	3.9	1.5	4.1
<b>Technology Development</b>	21.4		TBD	TBD	TBD	TBD	
<b>Total Hanford Projects</b>	1067.1	995.0	1090.2	1065.1	1138.4	1065.1	1193.5

\* See narrative directly below this chart

\*\* Excludes NE workscope and funding

The approved baseline excludes the recently approved TWRS FY 1999 Multi-Year Work Plan (MYWP), which incorporates the signed tank vitrification contract. When these changes are incorporated into the approved baseline, the gap between the FY 2000 baseline and the funding target will be well over \$100 million.

The FY 2001 critical needs shortfall is expected to be over \$200 million once approved baselines are updated. This gap is the result of flat funding assumptions for FY 2001. Requests for additional funding will be necessary to address these shortfalls.

The FY 2001 Integrated Priority List (IPL), which identifies the work scope and funding necessary to meet all critical needs, was in public review until March 31, 1999. It will be submitted to DOE-HQ by the middle of April, and will reflect the priorities and critical needs of the Site within the assumed flat funding level of \$1,065 million. The FY 2001 funding target allocations, by mission area in the above chart, reflect the proposed IPL. Allocations may change in the April submittal.

Allocations by mission area for FY 2002 are established via the annual IPL process, and will not be available until the February 2000 report. However, at this time, a funding target of \$1,065 million is also the assumption for FY 2002.

## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

### Milestone Performance

#### **FY 1999 Enforceable Agreement, DNFSB, & HQ Milestones**

Mission Area	Enforceable Agreement, DNFSB, & HQ Milestones					
	Total FY			By Exception		
	EA	DNFSB	HQ	Completed Late	Overdue	Forecast Late
<b>TWRS</b>	13	5	5	0	4	3
Waste Management	7	0	0	0	0	0
Spent Nuclear Fuel	2	0	0	0	0	0
Facility Stabilization	5	5	1	0	2	2
Landlord	0	0	0	0	0	0
Environmental Restoration	12	0	0	0	0	1
Science & Technology	0	0	0	0	0	0
Mission Support	36	0	1	0	0	0
HAMMER	0	0	0	0	0	0
TWRS Regulatory Unit	0	0	0	0	0	0
National Programs	0	0	0	0	0	0
Advanced Reactors	2	0	0	0	2	0
Technology Development	0	0	0	0	0	0
EM-50	0	0	26	1	1	2
RL	0	5	0	0	0	0
<b>Total Hanford</b>	77	15	33	1	9	8

Out of a total of 125 EA, DNFSB, and HQ milestones scheduled for completion in FY 1999, 39 have been completed early or on schedule (31 percent), 9 are overdue (7 percent), and 8 are forecast late (6 percent). In process baseline changes will result in the deletion of two overdue and three forecast late milestones in the TWRS Mission area. Two overdue and two forecast late milestones in Facility Stabilization will either be cancelled or rescheduled by baseline changes. Likewise, the two overdue Advanced Reactor Transition (ART) milestones are proposed to be placed in abeyance pending a decision on the future of the Fast Flux Test Facility (FFTF). A detailed analysis including RL and Field Office milestones and prior year milestones can be found in the Site Summary and individual Project Sections.

## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

### Staffing

	<b>Current</b>	<b>FYTD FTE</b>		<b>Fiscal Year</b>
	<b>Headcount</b>	<b>Budget</b>	<b>Actual</b>	<b>End FTE</b>
				<b>Budget</b>
Department of Energy, Richland	516	520	516	520
Bechtel Hanford, Incorporated	770	863	772	763
Pacific Northwest National Laboratory	3,029	2,862	2,797	2,872
		<b>Current Month FTE</b>		
Tank Waste Remediation System	N/A	1,541	1,238	1,431
Waste Management	N/A	732	669	691
Spent Nuclear Fuels	N/A	504	430	500
Facility Stabilization	N/A	978	875	932
Infrastructure	N/A	27	27	14
Mission Support	N/A	110	90	102
HAMMER	N/A	32	36	34
National Programs	N/A	12	8	12
Advanced Reactor Transition	N/A	277	273	294
Other PHMC (Indirect/Work for Others)	N/A	1,620	1,583	1,785
Total PHMC	5,421	5,833	5,229	5,795
<b>Total Hanford</b>	<b>9,736</b>	<b>10,078</b>	<b>9,314</b>	<b>9,950</b>

FYTD FTE's are underrunning 8%/764 FTE's (PHMC 604, BHI 91, PNNL 65, and RL 4).

The PHMC underrun (TWRS 324, Spent Nuclear Fuel 94, Facilities 92, Waste Mgmt 59, and Indirects 33) reflects increased utilization of contract personnel versus direct hires. This supports contractual goals to outsource half of the PHMC work over the first five years of the contract. Health Physics Technicians are being hired as quickly as possible, given their limited availability in the community.

Bechtel's underrun is attributable to the completion of several scopes ahead of schedule, delayed hiring of non-manual personnel including displacement by temporary contract personnel, and level of effort time phasing not matching the manner in which work is being accomplished.

At PNNL, the second quarter has not resulted in the staffing levels necessary to achieve FTE projections. The Laboratory continues to emphasize growth and the need to hire senior staff capable of attracting work to the Lab in the future.

N/A = headcount is not tracked by PHMC project.

## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

### EM Management Commitments

Performance Measures	EM Management Commitment	FY 1999 Current Baseline	FYTD Planned	FYTD Actual
<b>Release Sites</b>				
Assessments completed	46	47	0	0
Release sites completed	32	19	4	3
<b>Facilities Deactivated/Decommissioned</b>				
Facilities deactivated	50	50	25	23
Facilities decommissioned	38	13	0	26
<b>High Level Waste</b>				
Stored - total inventory (m <sup>3</sup> )	207,000	207,000	206,000	205,000
<b>TRansUranic (TRU) Waste</b>				
Stored - total inventory (m <sup>3</sup> )	16,300	16,300	16,300	16,300
Treated (m <sup>3</sup> )	182	182	62	37
Disposed (shipped to DOE site m <sup>3</sup> )	22	22	0	0
<b>Mixed Low Level Waste</b>				
Stored - total inventory (m <sup>3</sup> )	10,000	10,000	9,600	9,280
Treated (m <sup>3</sup> )	608	608	16	0
<b>Low Level Waste</b>				
Stored - total inventory (m <sup>3</sup> )	180	180	180	180
Disposed (on-site/commercial) (m <sup>3</sup> )	6,120	6,120	2,840	2,560
<b>Material Stabilized</b>				
Plutonium Oxide (cans)	238	110	20	21
Plutonium Solution (L)	40	40	0	0
Uranium in other forms (kg)	78	0	0	0
<b>Technology Deployments</b>	12	14	4	4
<b>Pollution Prevention</b>				
HAZ (MT)	109	109.00	25.50	25.50
SAN (MT)	4,773	4,773.00	352.20	352.20
LLW (m3)	1,934	1,933.50	78.70	78.70
MLLW (m3)	249	249.00	71.80	71.80
<b>Cleanup/Stabilized Waste Avoided</b>	5,601	5,601	7,834	7,834
FY 1999 planned baseline amount (m <sup>3</sup> )	5,601	5,601	9,864	9,864
FY 2000 planned baseline amount (m <sup>3</sup> )	6,075	6,075	N/A	N/A

**Waste Storage Summary:** All wastes (High Level Waste [HLW], Transuranic [TRU], Mixed Low Level Waste [MLLW], and Low Level Waste [LLW]) continue to be safely stored on the site. 205,000 m<sup>3</sup> of HLW is stored and surveyed within 149 single shell and 28 double shell underground storage tanks. There are 16,300 m<sup>3</sup> of TRU waste safely stored and managed within the low-level burial grounds and TRU waste storage facilities in the Central Waste Complex (CWC). Nine thousand, two hundred eighty m<sup>3</sup> of MLLW is safely stored and managed in mixed waste storage facilities in the CWC. There are also 180 m<sup>3</sup> of LLW-bearing liquid remaining in safe storage pending treatment for disposal.

## **PERFORMANCE DATA AND ANALYSIS (CONTINUED)**

### **EM Management Commitments (Continued)**

Waste Treatment Summary: Treatment of HLW, TRU, and MLLW planned for FY 1999 supports management of waste storage and disposal. Although the EM Management Commitment is zero, 3,780 m<sup>3</sup> of HLW is planned to be processed through the 242-A evaporator to support management of HLW storage capacity in underground storage tanks.

Delays at the Waste Experimental Reduction Facility (WERF) postponed planned treatment of 16 m<sup>3</sup> of MLLW until the third quarter. The total FY 1999 planned volume to be treated at WERF is still expected to be completed by the end of this fiscal year. Through the second quarter, 37 m<sup>3</sup> of TRU waste was treated in the Waste Receiving and Processing (WRAP) facility. Delays and slowdowns due to maintenance/ adjustments being made to the glove box at WRAP, and a delay in Non-Destructive Assay (NDA) operations at the WRAP facility contribute to the shortfall of the 62 m<sup>3</sup> of TRU waste planned to be treated through this quarter. The WRAP facility still plans to recover the schedule and complete the total 182 m<sup>3</sup> for FY 1999. Adequate storage capacity is available at the CWC to store newly generated MLLW and TRU wastes until treatment capacity is made available.

Waste Disposal Summary: All newly generated LLW from onsite and offsite receipts were disposed of in the burial grounds. Two thousand five hundred sixty m<sup>3</sup> of LLW has been disposed in the low-level burial grounds through the second quarter.

Nuclear Material Stabilization Summary: The DOE hold on all Plutonium Finishing Plant (PFP) fissile material work has been lifted. Twenty-one cans of plutonium oxides have been stabilized this quarter. The current baseline reflects a reclassification of the nuclear materials resulting in use of a larger can size for the stabilized oxides. The larger can size will result in production of 110 cans of stabilized oxides in FY 1999 rather than the EM Commitment of 238 cans.

Remedial Actions Summary: ER release sites currently being remediated are located at the Hanford B/C and D Reactor Areas and in the 300 Area. The number of release sites planned for completion in FY 1999 was revised from 32 to 19 through baseline change control due the discovery of additional plumes and chromium contaminants. Although the number of sites decreased, the quantity of waste (primarily contaminated soil) planned for disposition at ERDF in FY 1999 has increased over 7 percent. Three of the four FYTD sites planned were completed ahead of schedule. The 316-2-process pond in the 300 Area has been delayed due to the discovery of plumes. A Baseline Change Proposal (BCP) is in process to move remediation of this site to FY2000.

## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

### EM Management Commitments (Continued)

Completed Assessments: Due to a change in the definition of “assessment,” the 511 assessments reported last quarter have been reduced via baseline change control to 47. The new baseline reflects the following site totals by fiscal year:

- FY 1999 - Burial Ground Sites/Assessments (47);
- Elimination of FY 1999 Group 5 Remedial Design New Sites (46). (These site assessments were included in the Remaining Sites Proposed Plan in FY 1998.)
- FY 2000 - 300-FF-2 sites moved to FY 2000 from FY 1999 (418).

Facilities Summary: Nine facilities were deactivated this quarter for a total of 23 facilities deactivated through the second quarter. Of the 23 deactivated facilities, 22 were planned and one was not. The additional facility was deactivated as part of isolation of utilities for deactivation of a planned facility. Of the remaining three facilities planned for deactivation during the second quarter, two will still be deactivated this year. The remaining facility, the 747 Environmental Sciences Building, cannot be deactivated because the utilities for a required facility with a continuing mission (747A, which contains the PNNL Whole Body Counter) pass through it. This facility will be replanned for deactivation concurrent with 747A in the outyears.

Technology Deployment: The site is currently on schedule to meet 12 deployments by September 30, 1999. Four technologies have been deployed to date. Ten others are planned during the last two quarters. The projects are being reviewed to see if additional technologies meet the requirements for deployments and will be added to the list as appropriate. Five TWRS deployments were dropped (Light Duty Utility Arm, Mixer Pumps, Level Analyzer, Suspended Solids Profiler and Gamma Probe) as a result of funding cuts earlier in the year (W-151 and HTI), and eight new TWRS deployments have been added. The mechanical Crust Breaker for tank 241-SY-101 (on the list) is not being counted at this time due to pending evaluation and qualification of technical features.

Pollution Prevention: HAZ/SAN/LLW/MLLW represents the actual routine waste generation quantities, which are desired to be more than a 50 percent reduction from the baseline. Excellent progress was made in the avoidance of actual cleanup/stabilization waste. The FY 1999 planned baseline amount for the cleanup/stabilization was projected at 5,601 m<sup>3</sup> for the year. The 5601 m<sup>3</sup> baseline will be adjusted upward by at least 4000 m<sup>3</sup> due to increased ER disposal volumes.

## **PERFORMANCE DATA AND ANALYSIS (CONTINUED)**

### **High Visibility Projects**

Projects designated as High Visibility meet the following criteria:

- (1) the project is recommended as such by the Field Office or HQ;
- (2) the project is critical to the success of the EM program;
- (3) the project is of high stakeholder interest, and/or
- (4) the project has a large total cost, large potential cost savings, or large mortgage reduction potential.

These projects warrant increased scrutiny from HQ in planning, execution oversight, and evaluation. If a project is identified as "high visibility," at least one management commitment must be designated in the execution year.

The Critical Closure Path is a collection of the high-level activities, events, and/or decisions that must occur "on schedule" to achieve closure of the planned Site cleanup mission. The preparation, immobilization and final disposition of tank wastes defines the overall critical closure path for the Hanford Site.

Other Major Milestones are significant milestones associated with those projects not already designated as high visibility projects or critical closure path.

The chart on the following page provides status of the High Visibility Project and Critical Closure Path Milestones.

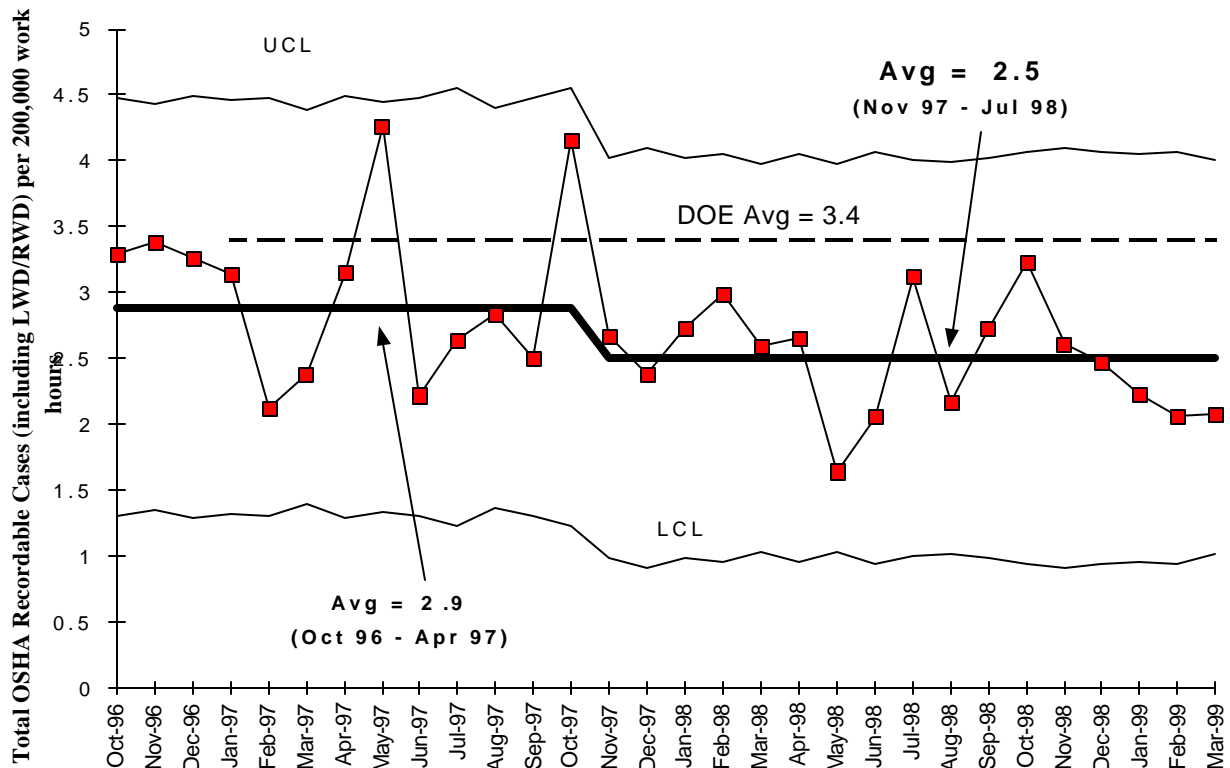
## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

<b>High Visibility Project Milestones</b>		<b>Due Date</b>	<b>Status/Comments</b>
<b>Facility Stabilization</b>			
	Obtain PFP Tank 241-Z-361 Core Samples	9/30/99	On schedule
	Restart PFP Prototype Calcinor	9/30/99	On schedule.
	Restart & achieve progress on PFP Thermal Stabilization	9/30/99	On schedule
	Declare readiness for ISMS Phase II verification at PFP	9/30/99	On Schedule
	Remove waste from Spent Fuel Operation in 327 Facility	9/30/99	On schedule
<b>Tank Waste Remediation Systems</b>			
	Recommend closure of DNFSB Recommendation 93-5	9/30/99	On schedule. There are 2 open milestones.
	Resolve Nuclear Criticality Safety Issue (M-40-12)	9/30/99	On schedule.
	Recommend closure of DNFSB Recommendation 92-4	9/30/99	On schedule. All milestones have been completed.
<b>Groundwater/Vadose Zone</b>			
	Develop long-range plan/project specification/Science & Technology road maps to reflect the overall strategy and baseline for the GW/Vadose Zone Integration Project. Public workshops will be held in January and February, 1999, with the first revision of these products completed by 5/31/99	5/31/99	Revised due date to 6/30/99. Original date assumed limited comments from the public. The review period was subsequently extended one month, and over 700 comments were received. Additionally, the Expert Panel requested the ability to review and comment, and will share those comments at a Mid-May meeting
	Define requirements and design criteria for the System Assessment Capability to support cleanup and closure decision on the Hanford Site	9/30/99	On schedule
<b>Spent Nuclear Fuel</b>			
	Complete KW IWTS construction/installation (M-34-11-T1)	6/21/99	On schedule.
	Complete KW FRS construction (M-34-13A-T1)	7/7/99	On schedule
	Complete CVD construction/acceptance 1st two bays (M-34-15A-T1)	8/27/99	On schedule.
	Complete KW Cask Facility Mods (M-34-14A)	9/22/99	On schedule
<b>Critical Closure Path Milestones</b>			
<b>Tank Waste Remediation Systems</b>			
	Complete assessment to determine if BNFL should continue to develop the Part B-1 design and financial deliverables.	3/31/99	Complete. ORP presented its findings to the ORP Executive Review Board on 3/24/99.

## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

### Safety Overview

**Hanford Site Total OSHA Recordable Case Rate**



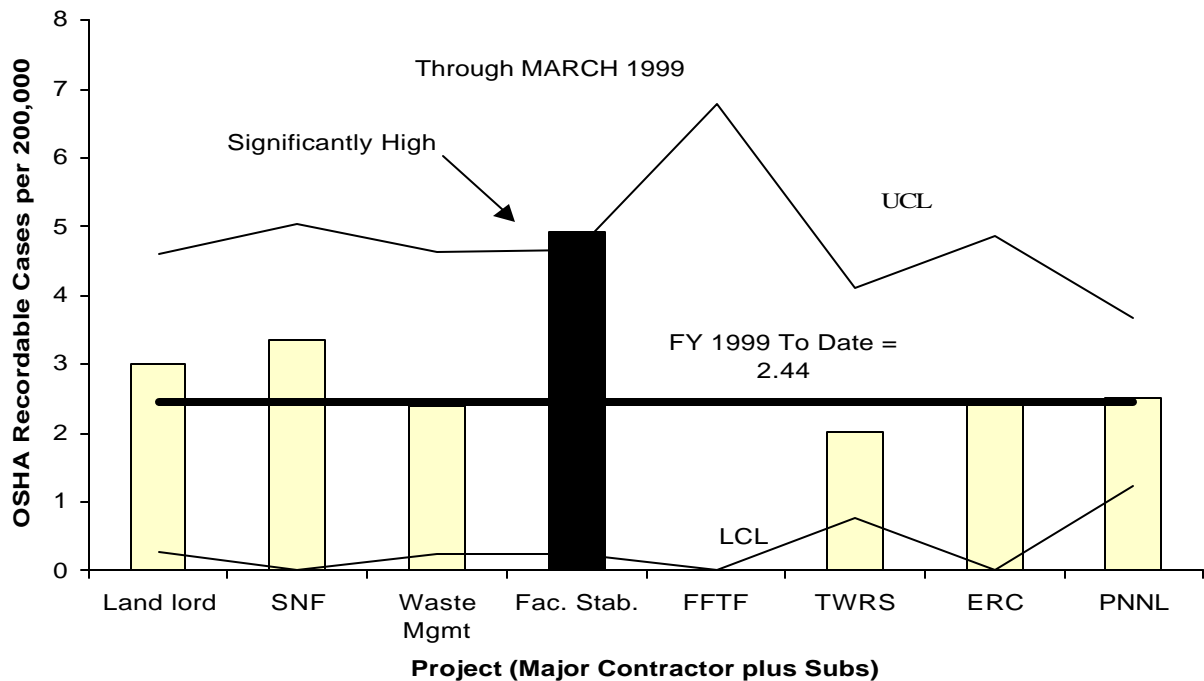
**DOE Complex Averages:** DOE and Contractors CY 97 Rate = 3.4, Contractor = 3.6, Construction = 4.6, Research = 3.4.

**Current Trends:** Sitewide data has been stable since October 1997. Although this rate is well below the DOE average, efforts continue across the Site to further reduce this rate.

## PERFORMANCE DATA AND ANALYSIS (CONTINUED)

### Safety Overview (Continued)

**Hanford Site OSHA Recordable Cases by Project**



This graph of the Hanford Site OSHA Recordable Cases by Project includes PNNL, ERC, and major PHMC Projects, and is centered on the total Hanford Average. The PHMC's Facility Stabilization project continues to be significantly above the site average. Facility Stabilization workers and safety personnel are reviewing the illness and injury records and implementing actions intended to reduce these rates.

Tank Waste Remediation System (TWRS) has demonstrated a significant reduction in Lost Away workday case rate, and their OSHA Recordable Case Rate appears to have stopped increasing.

The ERC, and the PHMC's Waste Management and Landlord (DynCorp) Projects have demonstrated significant reductions in their OSHA recordable case rates over the past year.